

CLAIM AMENDMENTS

1. (Currently Amended) ~~A One or more~~ processor-accessible computer readable memory ~~tangible storage media~~ comprising processor-executable instructions stored thereon that, when executed, direct a device to perform a method comprising:

converting a plurality of programs into corresponding intermediate language programs, the plurality of programs being written in different programming languages but according to a common language specification;

exposing resources of an operating system or an object model service via application program interface (API) functions of a program interface layer to the plurality of intermediate language programs, the program interface layer to receive calls to the API functions from the plurality of intermediate language programs, wherein one of the API functions communicates in a first form and another of the API functions communicates in a second form that is incompatible with the first form;

providing a common language run time layer that hands calls to the API functions of the program interface layer by the plurality of intermediate language programs to the operation system or the object model server for execution;

creating a plurality of namespaces to organize the API functions of the program interface layer, the namespaces including a first namespace that includes API functions of the program interface layer that enable identification of particular physical locations, a second namespace that includes API functions of the program interface layer that are expected to be used by the first namespace; and

converting a communication associated with an API function of the program interface layer from the first form to the second form.

2. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to moving data between file systems.

3. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to creating and managing rules for generating notifications.

4. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types describing types defined in all the other groups of types.

5. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to base types that form a foundation to support all the other groups of types.

6. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types common to multiple kinds of messages, including the electronic mail messages; and an eleventh group of types specific to facsimile messages.

7. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to annotations; and an eleventh group of types related to notes.

8. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to installed programs; and an eleventh group of types related to installed games.

9. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to actions taken by a user; and an eleventh group of types related to maintaining and accessing help information.

10. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to a natural language search engine.

11. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to tasks in a user interface to let a user know what actions the user can perform when navigating the user interface.

12. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to user tasks.

13. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to services that can be accessed.

14. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 13, wherein the services can be accessed over a network.

15. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to identifying access rights.

16. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to calendar types.

17. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to creating and managing event monitoring and resultant actions.

18. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types used for interop for each of the first through ninth groups of types.

19. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the group further include an additional group of types for each of the first through ninth groups of bytes, wherein each of the additional groups of types are for interop.

20. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the group further include a tenth group of types related to files stored in a file system.

21. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 54, wherein the groups further include a tenth group of types related to a category hierarchy.

22. (Previously Presented) A system framework comprising:
an operating system having a plurality of resources;
a common language runtime layer running on top of the operating system that enables at least one intermediate language application to access at least one resource of the operating system;

an application programming interface layer running on top of the common language runtime layer, the application program interface layer including functions that enable the at least one intermediate language application to access the at least one resource of the operating system via the common language runtime layer, the functions include a first function that communicates in a first form and a second function that communicates in a second form that is incompatible with the first form, the functions being organized into sets according to a file system of the application programming interface layer, the sets of functions including:

- a first set of functions that represent core concepts of a file system of the system;

- a second set of functions that enable maintaining information regarding entities that can be contacted; and

- a third set of functions that allow document types to be accessed, wherein the application programming interface layer is to receive at least one call to one or more functions in at least one of the sets from the intermediate language application, and to convert a communication associated with one of the functions from the first form the second form.

23. (Previously Presented) A system framework as recited in claim 22, wherein the functions further comprises a fourth set of functions related to base types for a plurality of kinds of media a fifth set of functions related specifically to audio media; and a sixth set of functions related specifically to video media.

24. (Previously Presented) A system framework as recited in claim 23, wherein the functions further comprises a seventh set of functions related specifically to image media.

25. (Previously Presented) A system framework as recited in claim 22, wherein the functions further comprises a fourth set of functions related specifically to electronic mail messages.

26. (Previously Presented) A system framework as recited in claim 22, wherein the functions comprises a fourth set of functions that enable maintaining physical location information.

27. (Previously Presented) A method of organizing a set of application program interface (API) functions of an API layer in a program development computer system into a hierarchical namespace, the method comprising:

creating a plurality of groups in a file system that resides on a server of the program development computer system for the set of API functions according to type, each group containing logically related API functions of the application program interface;

assigning a name to each group using the program development computer system, wherein one of the groups includes at least one API function related to core concepts of the file system, wherein another of the groups includes at least one API function related to entities that a human being can contact, wherein another of the

groups includes at least one API function related to document types that can be stored in the file system, and wherein another of the groups includes at least one API function related to multiple kinds of media;

selecting a top level identifier and prefixing the name of each group with the top level identifier using the program development computer system so that the types in each group are referenced by a hierarchical name that includes the selected top level identifier prefixed to the name of the group containing the type.

28. (Previously Presented) A method as recited in claim 27, wherein another of the groups includes at least one API function for audio media, wherein another of the groups includes at least one function for video media, and wherein another of the groups in the plurality includes at least one API function particularly for image media.

29. (Previously Presented) A method as recited in claim 27, wherein another of the groups in the plurality includes at least one API function related to electronic mail.

30. (Previously Presented) A method as recited in claim 27, wherein another of the groups includes at least one API function related to maintaining physical location information.

31. (Previously Presented) A method as recited in claim 27, wherein the assigning comprises: assigning a name of Core to the group that includes at least one API function related to core concepts of the file system so that the hierarchical name for

the group that includes at least one API function related to core concepts of the file system is System.Storage.Core; assigning a name of Contacts to the group that includes at least one API function related to entities that a human being can contact so that the hierarchical name for the group that includes at least one API function related to entities that a human being can contact is System.Storage.Contacts; assigning a name of Documents to the group that includes at least one API function related to document types that can be stored in the file system so that the hierarchical name for the group that includes at least one API function related to document types that can be stored in the file system is System.Storage.Documents; and assigning a name of Media to the group that includes at least one API function related to multiple kinds of media so that the hierarchical name for the group that includes at least one API function related to multiple kinds of media is System.Storage.Media.

32. (Previously Presented) A method as recited in claim 27, wherein the assigning comprises: assigning a name of Core to the group that includes at least one API function related to core concepts of the file system so that the hierarchical name for the group that includes at least one API function related to core concepts of the file system is System.Storage.Core; assigning a name of Contact to the group that includes at least one API function related to entities that a human being can contact so that the hierarchical name for the group that includes at least one API function related to entities that a human being can contact is System.Storage.Contact; assigning a name of Document to the group that includes at least one API function related to document types that can be stored in the file system so that the hierarchical name for the group that

includes at least one API function related to document types that can be stored in the file system is System.Storage.Document; and assigning a name of Media to the group that includes at least one API function related to multiple kinds of media so that the hierarchical name for the group that includes at least one API function related to multiple kinds of media is System.Storage.Media.

33. (Previously Presented) A method for organizing functions in a program development computer system, the method comprising:

creating a first namespace in a file system that resides on a server of the program development computer system, the first namespace includes application program interface (API) functions of an API layer that enable identification of particular physical locations using the program development computer system, the API interface layer running on top of a common language runtime layer to receive API function calls from an intermediate language program; and

creating a second namespace on the file system that includes API functions of the API layer that enable identification of entities that can be contacted by a human being using the program development computer system,

wherein the file system is included in a programming interface layer of the program development computer framework.

34. (Previously Presented) A method as recited in claim 33, further comprising: creating a third namespace using the program development computer

system that includes API functions of the API layer that enable documents to be described.

35. (Previously Presented) A method as recited in claim 33, further comprising: creating a third namespace using the program development computer system that includes API functions of the API layer specific to electronic mail messages.

36. (Previously Presented) A method as recited in claim 33, further comprising: creating a third namespace using the program development computer system that includes API functions of the API layer common to multiple kinds of media; creating a fourth namespace using the program development computer system that includes API functions of the API layer specific to audio media; creating a fifth namespace using the program development computer system that includes API functions of the API layer specific to video media; and creating a sixth namespace using the program development computer system that includes API functions of the API layer specific to image media.

37. (Previously Presented) A method as recited in claim 33, further comprising: creating a third namespace using the program development computer system that includes API functions of the API layer that are expected to be used by all other namespaces.

38. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ having stored thereon a plurality of instructions that, when executed by a processor, cause the processor to:

create a first namespace that includes application program interface (API) functions of the API layer that enable identification of particular physical locations, the API interface layer running on top of a common language runtime layer to receive API function calls from an intermediate language program; and

create a second namespace that includes API functions of the API layer that are expected to be used by the first namespace and a plurality of additional namespaces, wherein the first namespace, the second namespace, and the plurality of additional namespaces are defined to organize a file system, the file system being included in a programming interface for developing programs, one of the API functions of the API layer communicating in a first form and another function communicating in a second form which is incompatible with the first form; and

convert a communication associated with one of the API functions of the API layer and in the first form to the second form.

39. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ as recited in claim 38, wherein the instructions further cause the processor to: create a third namespace that includes API functions of the API layer that enable documents to be described; create a fourth namespace that includes API functions of the API layer that enable identification of entities that can be contacted by a

human being; and create a fifth namespace with that includes API functions of the API layer common to multiple kinds of media.

40. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ as recited in claim 39, wherein the instructions further cause the processor to: create a sixth namespace with that includes API functions of the API layer specific to audio media; create a seventh namespace with that includes API functions of the API layer specific to video media; and create an eighth namespace with that includes API functions of the API layer specific to image media.

41. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ as recited in claim 38, wherein the instructions further cause the processor to: create a third namespace with that includes API functions of the API layer common to multiple kinds of media; create a fourth namespace with that includes API functions of the API layer specific to audio media; create a fifth namespace with that includes API functions of the API layer specific to video media; and create a sixth namespace with that includes API functions of the API layer specific to image media.

42. (Previously Presented) A method comprising:
calling one or more first application program interface (API) functions of an API layer that is running on top of a common language runtime layer that resides on a server of a program development computer system, the one or more first API functions enable documents to be described;

calling one or more second API functions of the API layer that are core functions expected to be used by the one or more first functions as well as a plurality of additional functions, wherein the one or more first functions, the one or more second functions, and the plurality of additional functions are organized in a file system in the program development computer system, the file system being included in the API.

43. (Previously Presented) A method as recited in claim 42, further comprising: calling one or more third API functions of the API layer common to multiple kinds of media using the program development computer system.

44. (Previously Presented) A method as recited in claim 43, further comprising: calling one or more fourth API functions of the API layer specific to audio media using the program development computer system; calling one or more fifth API functions of the API layer specific to video media using the program development computer system; and calling one or more sixth API functions of the API layer specific to image media using the program development computer system.

45. (Previously Presented) A method as recited in claim 42, further comprising: calling one or more third API functions of the API layer using the program development computer system that enable identification of entities that can be contacted by a human being; and calling one or more fourth API functions of the API layer using the program development computer system that enable identification of particular physical locations.

46. (Previously Presented) A method as recited in claim 42, further comprising: calling one or more third API functions of the API layer specific to electronic mail messages using the program development computer system.

47. (Previously Presented) A method, comprising:
receiving one or more calls to one or more first application program interface (API) functions of the API layer that is running on top of a common language runtime layer, the one or more first API functions enable identification of entities that can be contacted by a human being; and

receiving one or more calls to one or more second API functions of the API layer that are core functions expected to be used by the one or more first API functions of the API layer as well as a plurality of additional API functions of the API layer using the program development computer system, wherein the one or more first API functions of the API layer, the one or more second API functions of the API layer, and the plurality of additional API functions of the API layer are defined to organize a file system in a server of the program development computer system, the file system being included in a programming interface.

48. (Previously Presented) A method as recited in claim 47, further comprising: receiving one or more calls using the program development computer system to one or more third API functions of the API layer that enable documents to be described; receiving one or more calls using the program development computer

system to one or more fourth API functions of the API layer common to multiple kinds of media; and receiving one or more calls using the program development computer system to one or more fifth API functions of the API layer that enable identification of particular physical locations.

49. (Previously Presented) A method as recited in claim 48, further comprising: receiving one or more calls using the program development computer system to one or more sixth API functions of the API layer specific to audio media; receiving one or more calls using the program development computer system to one or more seventh API functions of the API layer specific to video media; receiving one or more calls using the program development computer system to one or more eighth API functions of the API layer specific to image media and receiving one or more calls using the program development computer system to one or more ninth API functions of the API layer specific to electronic mail messages.

50. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ having stored thereon a plurality of instructions that, when executed by a processor, cause the processor to:

receive one or more calls to one or more first application program interface (API) functions of the API layer that enable identification of entities that can be contacted by a human being, the API layer running on top of a common language runtime layer; and

receive one or more calls to one or more second API functions of the API layer common to multiple kinds of media, wherein the one or more first API functions of the

API layer and the one or more second API functions of the API layer are defined to organize a file system, the file system being included in a programming interface for programming programs, one of the API functions of the API layer communicating in a first form and another function communicating in a second form which is incompatible with the first form; and

convert a communication associated with one of the API functions of the API layer and in the first form to the second form.

51. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ as recited in claim 50, wherein the instructions further cause the processor to: receive one or more calls to one or more third API functions of the API layer that are core API functions of the API layer expected to be used by the one or more first API functions of the API layer, the one or more second API functions of the API layer, and a plurality of additional API functions of the API layer.

52. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ as recited in claim 50, wherein the instructions further cause the processor to: receive one or more calls to one or more third API functions of the API layer that enable identification of particular physical locations; receive one or more calls to one or more fourth API functions of the API layer that enable documents to be described; and receive one or more calls to one or more fifth API functions of the API layer specific to electronic mail messages.

53. (Currently Amended) A computer readable memory ~~One or more tangible computer readable media~~ as recited in claim 50, wherein the instructions further cause the processor to: receive one or more calls to one or more third API functions of the API layer specific to audio media; receive one or more calls to one or more fourth API functions of the API layer specific to video media; and receive one or more calls to one or more fifth API functions of the API layer specific to image media.

54. (Currently Amended) A computer readable memory ~~tangible storage media~~ as recited in claim 1, wherein the API functions are organized into groups according to type, the groups including:

- a first group of types related to core file system concepts;
- a second group of types related to entities that a human being can contact;
- a third group of types related to documents;
- a fourth group of types common to multiple kinds of media;
- a fifth group of types specific to audio media;
- a sixth group of types specific to video media;
- a seventh group of types specific to image media;
- an eighth group of types specific to electronic mail messages; and
- a ninth group of types related to identifying particular locations.